Strategic Guidance

Quest for agility, innovation, and affordability

"As we end today's wars and reshape our Armed Forces, we will ensure that our military is agile, flexible, and ready for the full range of contingencies."

"This country is at a strategic turning point after a decade of war and, therefore, we are shaping a Joint Force for the future that will be smaller and leaner, but will be agile, flexible, ready, and technologically advanced."

– Sustaining US Global Leadership: Priorities for the 21st Century Defense

"Achieving Dominant Capabilities through Technical Excellence and Innovation:

1. Achieve affordable programs;
2. Achieve dominant capabilities while controlling lifecycle costs;
3. Incentivize productivity in industry and Government;
4. Incentivize innovation in industry and Government;
5. Eliminate unproductive processes and bureaucracy;
6. Promote effective competition;
7. Improve tradecraft in acquisition of services; and
8. Improve the professionalism of the total acquisition workforce.

Continue strengthening our culture of: Cost Consciousness, Professionalism, and Technical Excellence"

– Better Buying Power 3.0

We must accelerate innovation throughout the Department in several linked areas:

- *A new long-range research and development planning program will identify, develop, and field breakthrough technologies and systems that sustain and advance the capability of U.S. military power.*
- *New operational concepts will explore how to employ resources to greater strategic effect and deal with emerging threats in more innovative ways.*

– Defense Innovation Initiative, November 15, 2014

"Staying ahead of security challenges requires that we continue to innovate, not only in the technologies we develop, but in the way the U.S. forces operate. Innovation – within the Department and working with other U.S. departments and agencies and with international partners – will be center stage as we adapt to meet future challenges."

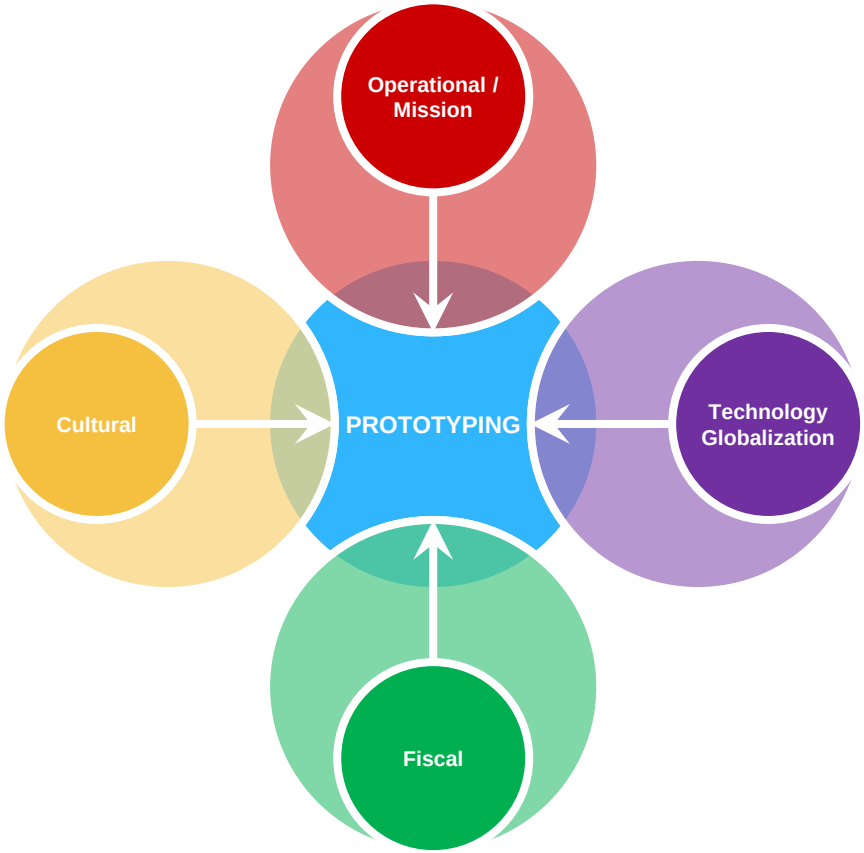
– Quadrennial Defense Review 2014

"When there is a strong threat-based or operationally driven need to field a capability solution in the shortest time, MDAs are authorized to implement streamlined procedures designed to accelerate acquisition system responsiveness. Statutory requirements will be complied with, unless waived in accordance with relevant provisions."

– DoDI 5000.02, January 7, 2015

Challenges

- Spectrum of operational needs
- Prioritization of mission areas
- Exploring potential military use of non-military technology
- Constrained fiscal environment
- Cultural changes



Prototyping as a Path to Agility, Innovation, and Affordability

AGILITY

Paul MacCready wins the Kremer prize in 1977 for human powered flight by designing an aircraft that can quickly be reconfigured, saving time during the prototyping process.

INNOVATION

Declining budgets following WWI coincided with the rise of air power.

HMS Hermes is the first official aircraft carrier.

AFFORDABILITY

In 1947, Chuck Yeager breaks the sound barrier in the Bell X-1 prototype – the start of big budget prototyping efforts.

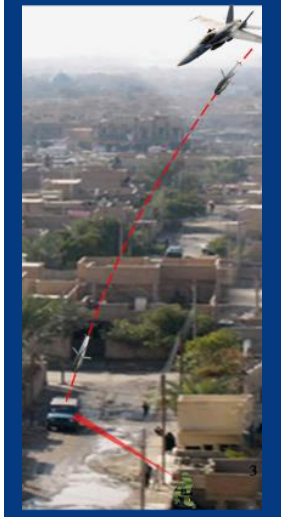
Enable DoD to:

- Explore the realm of the possible without commitment to follow-on procurement
- Cost-effectively enhance interoperability and reduce lifecycle costs
- Devise / demonstrate a hedge against technical uncertainty or unanticipated threat
- Advance technical skill sets
- Advance the state of practice in unique disciplines

Methodology

Capability Shortfall

Problem Definition



Decompose Problem

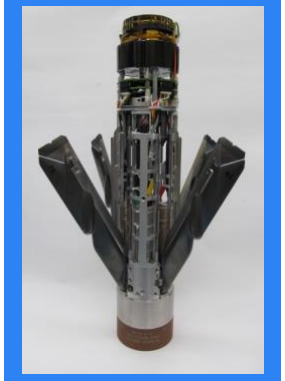
- Find
- Fix
- Target
- Track
- Engage
- Assess

Define Solution Options

- Find – Yes
- Fix – Yes
- Target – Yes
- Track – Maybe
- Engage – No
- Assess – Yes

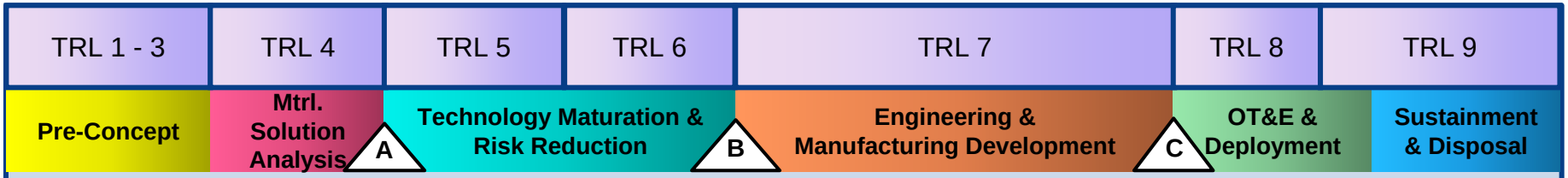
Prototype

Marry guidance system to existing rocket



Assessment

Prototype Categories



Proof of Principle Prototypes

- Demonstrate feasibility of an integrated capability
- Provide evidence of overcoming specific technical risk barriers
- Develop sufficiently detailed cost data to enable cost-capability trades

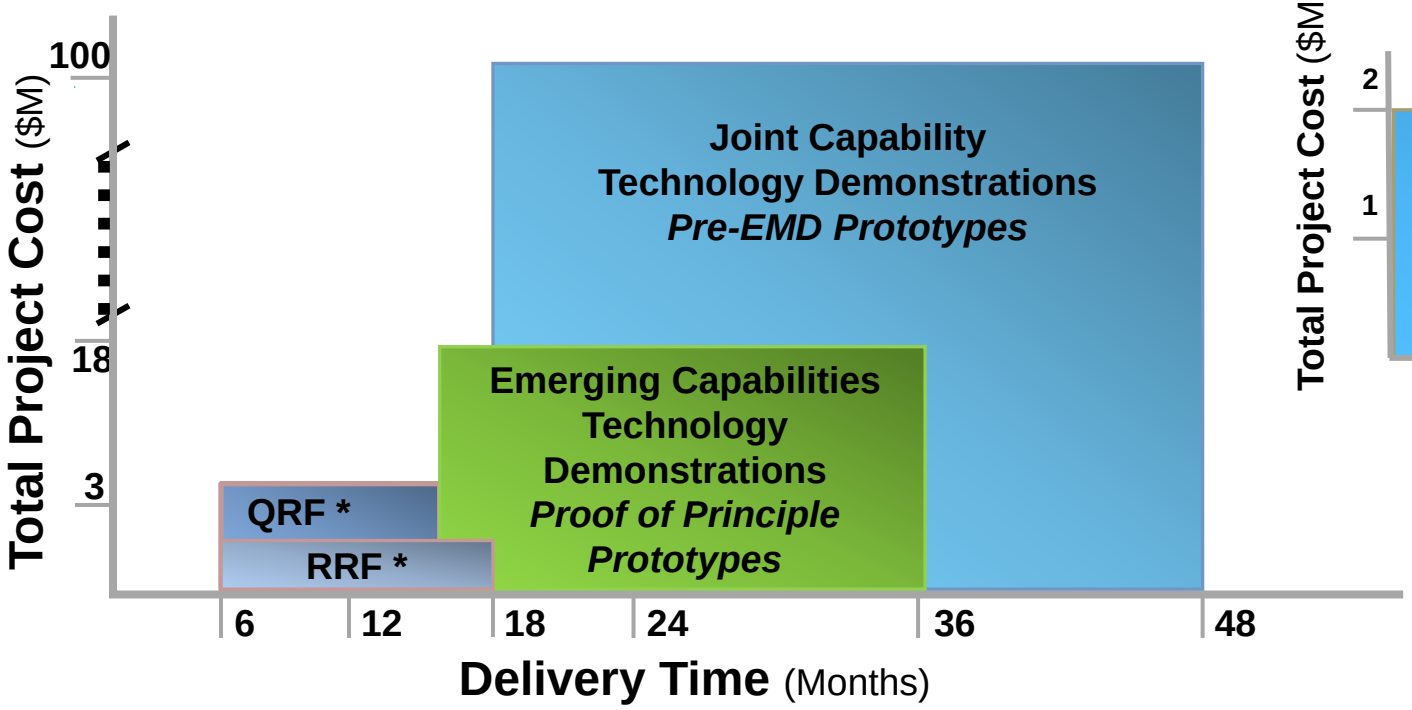
Pre-EMD Prototypes

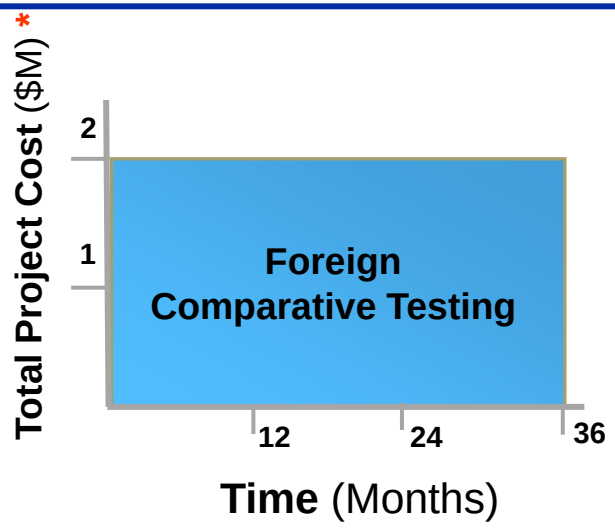
- Demonstrate military utility of integrated capability solutions
- Demonstrate robust fabrication processes
- Demonstrate performance in specific operational environments
- Define form, fit, function and “ilities”
- Enable business case analyses

EC&P FY15-16 Focus Areas

- Electromagnetic Spectrum Agility
- Autonomous Systems
- Space Capability Resilience
- Asymmetric Force Application

EC&P Program Elements & Parameters





- QRF – Quick Reaction Fund (conventional systems)
- RRF – Rapid Reaction Fund (unconventional systems)

* FY15 and beyond

Joint Capability Technology Demos (JCTD)	Emerging Capabilities Technology Demonstrations (ECTD)	Quick Reaction Special Projects (QRSP)	Foreign Comparative Testing (FCT)